

WHAT IS CLAIMED IS:

1. A light source unit comprising:

5 a light source comprising a plurality of light source elements for emitting different wavelengths of light;

a temperature controller for keeping the light source at constant temperature;

10 a light mixer for mixing light emitted by the plurality of light source elements;

a light detector for detecting light from the light mixer capable of detecting a plurality of different wavelengths of light; and

15 a light source controller for controlling luminance of each of the plurality of light source elements based on values detected by the light detector.

20 2. A light source unit according to Claim 1, wherein the light detector detects a plurality of different wavelength ranges, and the light source controller controls luminance of each of the plurality of light source elements so that each detected value in the plurality of wavelength ranges
25 approaches each given value.

3. A light source unit according to Claim 1,
further comprising a temperature detector for
detecting temperature of the light source, wherein
the temperature controller operates so that a value
5 detected by the temperature detector approaches a
given value.

4. A light source unit according to Claim 1,
wherein the temperature controller operates to keep
10 the light source constant at constant temperature,
and the light source controller controls luminance
of each of the plurality of light source elements so
that the light source unit has substantially constant
chromaticity.

5. A light source unit according to Claim 1,
further comprising a temperature detector for
detecting temperature of the light source, wherein
the temperature controller changes a temperature
20 value to be maintained in the light source based on
a temperature value detected by the temperature
detector, and the light source controller controls
each of the plurality of light source elements to have
luminance corresponding to the temperature value to
25 be maintained.

6. A light source unit according to Claim 1,
wherein the light source comprises a plurality of
light source elements emitting light with
wavelengths corresponding to each of N (N is a natural
5 number) number of colors, the light detector
comprises N number of optical sensors corresponding
to each of N number of colors, and the light source
controller controls each of the plurality of light
source elements so that each value detected by the
10 N number of optical sensors approaches each given
value.

7. A light source unit, comprising:
a light source comprising a plurality of light
15 source elements for emitting different wavelengths
of light;
a light mixer for mixing light emitted by the
plurality of light source elements;
a light detector for detecting light from the
20 light mixer capable of detecting a plurality of
different wavelengths of light;
a temperature detector for detecting
temperature of the light source; and
a light source controller for controlling
25 luminance of each of the plurality of light source
elements based on values detected by the light

detector and the temperature detector.

8. A light source unit according to Claim 7,
wherein the light source controller controls
5 luminance of each of the plurality of the light source
elements based on a change in a value detected by the
temperature detector so as to suppress a change in
chromaticity of the light source unit

10 9. A light source unit according to Claim 7,
wherein the light source comprises a plurality of
light source elements emitting light with
wavelengths corresponding to each of N (N is a natural
number) number of colors, the light detector
15 comprises N number of optical sensors corresponding
to each of N number of colors, and the light source
controller controls each of the plurality of light
source elements so that each value detected by the
N number of optical sensors approaches each given
20 value.

10. A light source unit according to Claim 7,
wherein the light source controller controls each of
the plurality of light source elements to emit light
25 with luminance corresponding to a temperature value
detected by the temperature detector.

11. A display device comprising:

a light source unit; and

5 a display panel for displaying images by
controlling light emitted by the light source unit;

the light source unit comprising:

a light source comprising a plurality of light
source elements for emitting different wavelengths
of light;

10 a temperature controller for keeping the light
source at constant temperature;

a light mixer for mixing light emitted by the
plurality of light source elements;

15 a light detector for detecting light from the
light mixer capable of detecting a plurality of
different wavelengths of light; and

a light source controller for controlling
luminance of each of the plurality of light source
elements based on values detected by the light
20 detector.

12. A display device comprising:

a light source unit; and

25 a display panel for displaying images by
controlling light emitted by the light source unit;

the light source unit comprising:

a light source comprising a plurality of light source elements for emitting different wavelengths of light;

5 a light mixer for mixing light emitted by the plurality of light source elements;

a light detector for detecting light from the light mixer capable of detecting a plurality of different wavelengths of light;

10 a temperature detector for detecting temperature of the light source; and

a light source controller for controlling luminance of each of the plurality of light source elements based on values detected by the light detector and the temperature detector.

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